

In re Application of:
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Atty. Docket No.: INVIT1290-2

REMARKS

Claims 1-56 were pending in the present application. Claims 2, 3, 8, 9, 10, 12, 16, 20, 21, 23, 24, 26-31, 50 and 51 have been canceled. Claims 1, 6, 11, 13-15, 17-19, 21, 25, 26, 30-37, 40, 44, 46, 49, 52 and 56 have been amended. New claims 75-88 have been added. Thus, claims 1, 4-7, 11, 13-15, 17-19, 21, 22, 25-27, 30-49, 52-56 and 75-88 remain presented for examination. Support for the claim amendments and new claims may be found in the original claims and throughout the specification, for example in Fig. 1B; at p. 117-119 (Example 1); at p. 77, paragraphs [158] and [159]; in original claim 13; at page 26, paragraph [0053]; at pages 44-45, paragraphs [0093] and [0094], and in Figures 5A-5D. Therefore, these amendments do not add new matter, and their entry is respectfully requested.

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Rejection Under 35 U.S.C. § 102(b)

Claims 1-5, 8-10, 12-14, 25, 26, 28-31, 37-41, 44, 45 and 49-54 were rejected as being anticipated by Shuman (US 5,766,891) as evidenced by Shuman (*J. Biol. Chem.* **269**:32678-32684, 1994). This rejection is respectfully traversed.

Under 35 USC § 102, a claim can only be anticipated if every element in the claim is expressly or inherently disclosed in a single prior art reference. *See Kalman v. Kimberly Clark Corp.*, 713 F.2d 760, 771 (Fed. Cir. 1983), *cert. denied*, 465 U.S. 1026 (1984); *see also PPG Industries, Inc. v. Guardian Industries Corp.*, 75 F.3d 1558, 1566 (Fed. Cir. 1996) (“[t]o anticipate a claim, a reference must disclose every element of the challenged claim and enable one skilled in the art to make the anticipating subject matter”).

The claims as amended recite that the first ds nucleic acid molecule and said second ds nucleic acid molecule comprise a topoisomerase recognition site at each of their ends. Shuman teaches that *only one* of the ds nucleic acid molecules has a topoisomerase recognition site at each of its ends. *See* Fig. 5A of the Shuman '891 patent. Thus, the claims are not anticipated by this reference.

In view of the amendments and comments discussed above, applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 102(b).

Rejections Under 35 U.S.C. § 103(a)

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Claims 32-34 and 36 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Shuman (US 5,766,891). This rejection is respectfully traversed.

Shuman is applied for the reasons set forth above. As discussed above, Shuman does not teach that the first ds nucleic acid molecule and the second ds nucleic acid molecule comprise a topoisomerase recognition site at each of their ends. In addition, Shuman does not suggest this claim element. Accordingly, the claimed invention would not have been obvious in view of Shuman, and it is therefore respectfully requested that the rejection of claims 32- 34 and 36 be reconsidered and withdrawn.

Claims 6, 7, 11, 15 to 24, 27 and 35 were rejected under 35 U.S.C. § 103(a) as being obvious over Shuman in view of Yarovinsky. Applicants respectfully traverse this rejection.

Claims 6, 7 and 11 depend upon claim 1. Claims 27 and 35 depend on claim 25. Both claims 1 and 25 recite that both the first and second ds nucleic acid molecules comprise a topoisomerase recognition site at each of their ends. As discussed above, Shuman does not teach that the first ds nucleic acid molecule and the second ds nucleic acid molecule comprise a topoisomerase recognition site at each of their ends. Yarovinsky does not cure this defect in the teaching of Shuman. Because claim 1 is nonobvious over Shuman in view of Yarovinsky, then claims 6, 7 and 11 are necessarily nonobvious in view of these references.

Similarly, claim 15 recites that both the first and second ds nucleic acid molecules are topoisomerase-charged at each of their ends. Shuman only teaches that one of the ds nucleic acid

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molecules (the insert) is topoisomerase-charged at each of its ends. Yarovsky does not cure this defect in the teaching of Shuman. Because claim 15 is nonobvious over Shuman in view of Yarovsky, then claims 16-24 are necessarily nonobvious in view of these references.

Thus, Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a).

Claims 42 and 43 were rejected under 35 U.S.C. § 103(a) as being obvious over Shuman in view of Seed et al. Applicants respectfully traverse this rejection.

As discussed above, Shuman does not teach that the first ds nucleic acid molecule and the second ds nucleic acid molecule comprise a topoisomerase recognition site at each of their ends. Seed et al. does not cure this defect in the teaching of Shuman. Thus, Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a).

Claims 46 to 48 were rejected under 35 U.S.C. § 103(a) as being obvious over Shuman in view of Trono et al. Applicants respectfully traverse this rejection.

As discussed above, Shuman does not teach that the first ds nucleic acid molecule and said second ds nucleic acid molecule comprise a topoisomerase recognition site at each of their ends. Trono et al. does not cure this defect in the teaching of Shuman. Thus, Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a)..

In summary, none of these references, either alone or in combination, teach or suggest a method in which both a first ds nucleic acid molecule and a second ds nucleic acid molecule

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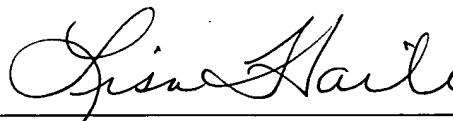
comprise a topoisomerase recognition site at each of their ends, or in which both ds nucleic acid molecules are topoisomerase-charged at each of their ends. Because the independent claims are novel and non-obvious, the dependent claims are necessarily novel and non-obvious.

In view of the amendments and the above remarks, it is submitted that the claims are in condition for allowance, and a notice to that effect is respectfully requested.

Check No. 579227 is enclosed in the amount of \$910.00 for the Request for Continued Examination fee and Petition for Extension of time -- 1 month fee. The Commissioner is authorized to charge Deposit Account No. 07-1896 if any fee is deemed necessary.

The Examiner is invited to contact Applicants' undersigned representative if there are any questions relating to this application.

Respectfully submitted,



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